UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,789	07/31/2003	Jin-Ru Chen		7882

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EXAMINER
GREY, CHRISTOPHER P

ART UNIT	PAPER NUMBER
2416	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/630,789	CHEN ET AL.
Office Action Summary	Examiner	Art Unit	
	CHRISTOPHER P. GREY	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2008*.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-20* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   In view of applicant's amendment filed on 7/22/08, the status of the application is

still pending with respect to claims 1-20.

Response to Arguments

2.   Applicant's arguments with respect to claims 1-20 have been considered but are

moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1, 3-12, 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Wang et al. (US 6538997), hereinafter referred to as Wang in view of Han et al.

(US 2004/0100903).

Regarding claim 1,   Wang discloses a request frame **(see fig 2, where layer 2**

trace packets emitted from the source are equivalent to request packets, also see

Col 3 lines 51-52, which states that the source sends the request), transmitted by

the first node **(fig 2, 102 shows a source)** including a source address **(Col 9 line27-29,**

see source MAC address) comprising a media access control (MAC) address of the

first node **(Col 9 line27-29, see source MAC address)**; and

a reply frame **(fig 2, 126 shows a response frame)**, transmitted by the second

node **(fig 2, destination 111 is equivalent to a second node)** after receiving the

request frame **(Col 3 lines 31-39, where trace response packet is sent in response**

to the trace request packet received from the source), including a destination

address **(fig 5 a/b which includes a dstn addr)** comprising the MAC address **(fig 5a/b,**

dstn address is MAC specific);

wherein a node **(fig 2, response node 113)** determines the connection status

(Col 5 lines 15-19, where configuration information is determined using the path

tracing) in a link layer **(invention is layer 2 based)**

according whether receiving the reply frame-frame **(the receipt of the response frame**

indicates success or error according to Col 8 lines 60-63);

wherein the request frame and the reply frame are formed independent of an

IP address **(see fig 5a and b which are MAC specific. i.e invention is layer 2 based.**

Also according to COL 5 lines 35-37, specified either IP address or a MAC

address, which indicates that the IP address is not necessary).

Wang discloses a MAC destination address and determining a connection status

as disclosed above. However Wang does not specifically disclose the MAC destination

address being that of a first node (however it is clear from the disclosure of Wang that

one skilled in the art could interpret a response node as any node, including that of the

source, where the source is equivalent to the first node. i.e. loopback makes use of

such a process) and the connection status being determined by a first node (However

one skilled in the art can appreciate that if the response node is equivalent to the source

node then this limitation is fulfilled).

Han discloses the MAC destination address **(Para 0043, where only MAC**

address info is sent from one node/AP to another node/gateway) being that of a

first node **(Para 0043, where the second node/AP responds to the query/request**

from the first node/gateway using a MAC address, where the combination of Han

and Wang are modified in order to make the first node the response node,

therefore the destination MAC address of the response node is now that of the

first node) and the connection status being determined by a first node **(Col 0043,**

where the bridge determines the users which are currently connected based on

the response to the query).

It would have been obvious to one of the ordinary skill in the art at the time of the

invention was disclosed to modify the request and reply method as disclosed by Wang,

as taught by Han, since stated in Para 0043 that such a modification will improve up to

dating of the status of connectivity of users.

Regarding claim 3, Wang discloses wherein both the destination address of the

request frame and the source address of the reply frame comprise a MAC address of

the second node **(see fig figs 5a and b and fig 6a source address).**

Regarding claim 4, Wang discloses wherein both the destination address of the

request frame and the source address of the reply frame comprise a MAC broadcast

address **(fig 2 describes a multicast of the trace, where the multicast address is equivalent to a broadcast address).**

Regarding claim 5, Wang discloses wherein the first node and the second node comprise a network interface card (NIC) or a switch **(Col 1 lines 11-13, bridges, routers and various other devices).**

Regarding claim 6, Wang wherein if the second node comprises the NIC **(Col 1 lines 11-13, bridges, routers and various other devices)**, it transmits the reply frame when the destination address

of the received request frame comprises a MAC address of the second node **(see fig 5a where the destination address is that of a MAC address, and a response frame is fwd as a result).**

Regarding claim 7, Wang discloses wherein if the second node comprises the switch **(Col 1 lines 11-13, bridges, routers and various other devices)**, it transmits the reply frame when destination address of the received request frame comprises a MAC broadcast address **(see fig 5a where the destination address is that of a MAC address, and a response frame is fwd as a result)**.

Regarding claim 8, Wang discloses wherein if the second node comprises the switch **(Col 1 lines 11-13, bridges, routers and various other devices)**, it selectively transmits the reply frame when a destination address of the received request frame comprises an-a MAC address of the second node **(see fig 5a where the destination address is that of a MAC address, and a response frame is fwd as a result)**.

Regarding claim 9, Wang discloses wherein both the request frame and the reply frame comprise an opcode for indicating the request frame and the reply frame respectively (see figs 5a and b and 6a, where the trace id or scope or option fields are equivalent to an opcode, and furthermore, the concept of opcodes are well known within the art).

Regarding claim 10,   Wang discloses wherein both the request frame and the reply frame comprise an identifier for indicating supporting the system **(fig 6a see protocol ID).**

Regarding claim 11,   Wang discloses wherein the network is an Ethernet network **(Col 8 lines 20-25).**

Regarding claim 12,   Wang discloses a request frame **(see fig 2, where layer 2 trace packets emitted from the source are equivalent to request packets, also see Col 3 lines 51-52, which states that the source sends the request),** transmitted by the first node **(fig 2, 102 shows a source)** including a source address **(Col 9 line27-29, see source MAC address)** comprising a media access control (MAC) address of the first node **(Col 9 line27-29, see source MAC address);** and

a reply frame **(fig 2, 126 shows a response frame),** transmitted by the second node **(fig 2, destination 111 is equivalent to a second node)** after receiving the request frame **(Col 3 lines 31-39, where trace response packet is sent in response to the trace request packet received from the source),** including a destination

address **(fig 5 a/b which includes a dstn addr)** comprising the MAC address **(fig 5a/b, dstn address is MAC specific)**;

wherein a node **(fig 2, response node 113)** determines the connection status **(Col 5 lines 15-19, where configuration information is determined using the path tracing)** in a link layer **(invention is layer 2 based)** according whether receiving the reply frame-frame **(the receipt of the response frame indicates success or error according to Col 8 lines 60-63)**;

wherein the request frame and the reply frame are formed independent of an IP address **(see fig 5a and b which are MAC specific. i.e invention is layer 2 based. Also according to COL 5 lines 35-37, specified either IP address or a MAC address, which indicates that the IP address is not necessary)**.

Wang discloses a MAC destination address and determining a connection status as disclosed above. However Wang does not specifically disclose the MAC destination address being that of a first node (however it is clear from the disclosure of Wang that one skilled in the art could interpret a response node as any node, including that of the source, where the source is equivalent to the first node. i.e. loopback makes use of such a process) and the connection status being determined by a first node (However one skilled in the art can appreciate that if the response node is equivalent to the source node then this limitation is fulfilled).

Han discloses the MAC destination address **(Para 0043, where only MAC address info is sent from one node/AP to another node/gateway)** being that of a

first node **(Para 0043, where the second node/AP responds to the query/request from the first node/gateway using a MAC address, where the combination of Han and Wang are modified in order to make the first node the response node, therefore the destination MAC address of the response node is now that of the first node)** and the connection status being determined by a first node **(Col 0043, where the bridge determines the users which are currently connected based on the response to the query).**

It would have been obvious to one of the ordinary skill in the art at the time of the invention was disclosed to modify the request and reply method as disclosed by Wang, as taught by Han, since stated in Para 0043 that such a modification will improve up to dating of the status of connectivity of users.

Regarding claim 15,   Wang discloses wherein the first node and the second node comprise a network interface card (NIC) or a switch **(Col 1 lines 11-13, bridges, routers and various other devices).**

Regarding claim 16,   Wang wherein if the second node comprises the NIC **(Col 1 lines 11-13, bridges, routers and various other devices)**, it transmits the reply frame when the destination address
of the received request frame comprises a MAC address of the second node **(see fig 5a where the destination address is that of a MAC address, and a response frame is fwd as a result).**

Regarding claim 17,   Wang discloses wherein if the second node comprises the switch **(Col 1 lines 11-13, bridges, routers and various other devices)**, it transmits the reply frame when destination address of the received request frame comprises a MAC broadcast address **(see fig 5a where the destination address is that of a MAC address, and a response frame is fwd as a result)**.

Regarding claim 18,   Wang discloses wherein if the second node comprises the switch **(Col 1 lines 11-13, bridges, routers and various other devices)**, it selectively transmits the reply frame when a destination address of the received request frame comprises an-a MAC address of the second node **(see fig 5a where the destination address is that of a MAC address, and a response frame is fwd as a result)**.

Regarding claim 19,   Wang discloses a request frame **(see fig 2, where layer 2 trace packets emitted from the source are equivalent to request packets, also see Col 3 lines 51-52, which states that the source sends the request)**, transmitted by the first node **(fig 2, 102 shows a source)** including a source address **(Col 9 line27-29, see source MAC address)** comprising a media access control (MAC) address of the first node **(Col 9 line27-29, see source MAC address)**; and

a reply frame **(fig 2, 126 shows a response frame)**, transmitted by the second node **(fig 2, destination 111 is equivalent to a second node)** after receiving the request frame **(Col 3 lines 31-39, where trace response packet is sent in response to the trace request packet received from the source)**, including a destination

address **(fig 5 a/b which includes a dstn addr)** comprising the MAC address **(fig 5a/b, dstn address is MAC specific)**;

wherein a node **(fig 2, response node 113)** determines the connection status **(Col 5 lines 15-19, where configuration information is determined using the path tracing)** in a link layer **(invention is layer 2 based)** according whether receiving the reply frame-frame **(the receipt of the response frame indicates success or error according to Col 8 lines 60-63)**;

wherein the request frame and the reply frame are formed independent of an IP address **(see fig 5a and b which are MAC specific. i.e invention is layer 2 based. Also according to COL 5 lines 35-37, specified either IP address or a MAC address, which indicates that the IP address is not necessary)**.

Wang discloses a MAC destination address and determining a connection status as disclosed above. However Wang does not specifically disclose the MAC destination address being that of a first node (however it is clear from the disclosure of Wang that one skilled in the art could interpret a response node as any node, including that of the source, where the source is equivalent to the first node. i.e. loopback makes use of such a process) and the connection status being determined by a first node (However one skilled in the art can appreciate that if the response node is equivalent to the source node then this limitation is fulfilled).

Han discloses the MAC destination address **(Para 0043, where only MAC address info is sent from one node/AP to another node/gateway)** being that of a

first node **(Para 0043, where the second node/AP responds to the query/request
from the first node/gateway using a MAC address, where the combination of Han
and Wang are modified in order to make the first node the response node,
therefore the destination MAC address of the response node is now that of the
first node)** and the connection status being determined by a first node **(Col 0043,
where the bridge determines the users which are currently connected based on
the response to the query).**

It would have been obvious to one of the ordinary skill in the art at the time of the
invention was disclosed to modify the request and reply method as disclosed by Wang,
as taught by Han, since stated in Para 0043 that such a modification will improve up to
dating of the status of connectivity of users.

5.   Claims 2, 13, 14 and 20 are rejected under 35 U.S.C. 103(a) as being
unpatentable over Wang et al. (US 6538997), hereinafter referred to as Wang in view of
Han et al. (US 2004/0100903) as applied to the claims above, and further in view of
Matsumuto (US 2001/0025314).

Regarding claim 2,   The combined teachings of Wang and Han do not
specifically disclose wherein the first node re-transmits the request frame if not receiving
the reply frame within a predetermined response time period.

Matsumoto discloses wherein the first node re-transmits the request frame if not
receiving the reply frame within a predetermined response time period **(Para 0056,
shows resending a request/ping given a predetermined time period has expired).**

It would have been obvious to one of the ordinary skill in the art at the time of the invention was disclosed to modify the combined teachings of Wang and Han, as taught by Matsumoto, since stated in Para 0059 that such a modification will enhance the detection of the presence/absence of a receiver terminal.

Regarding claim 13,   The combined teachings of Wang and Han do not specifically disclose wherein the first node determines the connection status through checking whether the reply frame is received within a predetermined response time period after the first node transmits the request frame.

Matsumoto discloses wherein the first node determines the connection status through checking whether the reply frame is received within a predetermined response time period after the first node transmits the request frame **(see fig 4 which determines connection upon receipt of a ping response before a timeout occurs).**

It would have been obvious to one of the ordinary skill in the art at the time of the invention was disclosed to modify the combined teachings of Wang and Han, as taught by Matsumoto, since stated in Para 0059 that such a modification will enhance the detection of the presence/absence of a receiver terminal.

Regarding claim 14,   The combined teachings of Wang and Han do not specifically disclose wherein the first node re-transmits the request frame if not receiving the reply frame within a predetermined response time period.

Matsumoto discloses wherein the first node re-transmits the request frame if not receiving the reply frame within a predetermined response time period **(Para 0056, shows resending a request/ping given a predetermined time period has expired).**

It would have been obvious to one of the ordinary skill in the art at the time of the

invention was disclosed to modify the combined teachings of Wang and Han, as taught

by Matsumoto, since stated in Para 0059 that such a modification will enhance the

detection of the presence/absence of a receiver terminal.

Regarding claim 20,   The combined teachings of Wang and Han do not

specifically disclose wherein the first node re-transmits the request frame if not receiving

the reply frame within a predetermined response time period.

Matsumoto discloses wherein the first node re-transmits the request frame if not

receiving the reply frame within a predetermined response time period **(Para 0056,**

shows resending a request/ping given a predetermined time period has expired).

It would have been obvious to one of the ordinary skill in the art at the time of the

invention was disclosed to modify the combined teachings of Wang and Han, as taught

by Matsumoto, since stated in Para 0059 that such a modification will enhance the

detection of the presence/absence of a receiver terminal.

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to CHRISTOPHER P. GREY whose telephone number is

(571)272-3160. The examiner can normally be reached on 10AM-7:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Moe Aung can be reached on (571)272-7314. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/   /Christopher P Grey/
Supervisory Patent Examiner, Art Unit 2416   Examiner, Art Unit 2416